

WHAT IS CLAIMED IS:

1. In a voice/data vocoding device for a mobile communication system, a device for scrambling voice and data in the mobile communication system comprising:

5 a controller for generating an operational mode control signal to control an operational mode of the voice and data, a scrambling key feeding control signal to control data scrambling, and a sync signal generation control signal;

an operational mode processor for vocoding or bypassing a voice/data packet received from a radio channel interval, based on the operational mode control signal of
10 the controller;

a random number generator for generating a random number based on the scrambling key feeding control signal of the controller;

a sync signal transmitter for generating a sync signal based on the sync signal generation control signal of the controller, and sending the generated sync signal to a
15 cable channel interval; and

a scrambler for scrambling a vocoded PCM (pulse code modulation) signal or a bypassed voice/data packet of the operational mode processor using the random number generated from the random number generator and, after complete transmission of the sync signal, sending the scrambled PCM signal or voice/data packet to the cable channel
20 interval.

2. The device as claimed in claim 1, further comprising a switching block switched to the sync signal generator under the control of the controller to send the sync

signal generated from the sync signal generator to the cable channel interval and, after complete transmission of the sync signal, switched to the scrambler according to the control signal of the controller to send the scrambled signal to the cable channel interval.

5 3. The device as claimed in claim 1, further comprising a scrambling key feeder for feeding the stored scrambling key to the random number generator based on the control signal of the controller.

10 4. The device as claimed in claim 1, wherein the random number generated from the random number generator includes positional information for scrambling the vocoded PCM signal or the bypassed voice/data packet of the operational mode processor.

15 5. In a voice/data vocoding device for a mobile communication system, a device for descrambling voice and data in the mobile communication system comprising:

 a sync signal detector for detecting a sync signal from an scrambled signal received from a cable channel interval;

 a controller for generating a descrambling control signal, an operational mode control signal, and a descrambling key feeding control signal, upon detection of the sync
20 signal at the sync signal detector;

 a random number generator for generating a random number based on the descrambling key feeding control signal of the controller;

 a descrambler for descrambling the scrambled signal received from the cable

channel interval using the random number generated from the random number generator, based on the descrambling control signal of the controller; and

an operational mode processor for vocoding a descrambled PCM signal of the descrambler into a packet or bypassing a voice/data packet, based on the operational mode control signal of the controller, and then sending the vocoded PCM signal or the
5 bypassed voice/data packet to a radio channel interval.

6. The device as claimed in claim 5, further comprising a switching block for switching the scrambled signal received from the cable channel interval to the
10 descrambler, based on the control signal of the controller.

7. The device as claimed in claim 5, further comprising a descrambling key feeder for feeding the stored descrambling key to the random number generator based on the control signal of the controller.
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8. The device as claimed in claim 5, wherein the random number generated from the random number generator includes positional information for descrambling the PCM signal or voice/data packet received from the cable channel interval.

20 9. In a voice/data vocoding device for a mobile communication system, a device for scrambling/descrambling voice and data in the mobile communication system comprising:

an operational mode processor for vocoding or bypassing a voice/data packet

received from a radio channel interval based on a received operational mode signal, and vocoding or bypassing a descrambled PCM signal or packet based on the operational mode signal;

5 a random number generator for generating a random number based on a received scrambling and descrambling key feeding control signal;

a sync signal transmitter for generating a sync signal based on a received control signal, and sending the generated sync signal to a cable channel interval;

10 a scrambler for scrambling the vocoded PCM signal or the bypassed voice/data packet of the operational mode processor using the random number generated from the random number generator and, after complete transmission of the sync signal, sending the scrambled PCM signal or voice/data packet to the cable channel interval;

a sync signal detector for detecting a sync signal from the scrambled signal received from the cable channel interval;

15 a descrambler for descrambling the scrambled signal received from the cable channel interval using the random number generated from the random number generator, based on a received descrambling control signal; and

a controller for generating the descrambling control signal to the descrambler, the scrambling and descrambling key feeding control signal, and the sync signal generation control signal, upon detection of the sync signal at the sync signal detector.

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10. The device as claimed in claim 9, further comprising a descrambling key feeder for feeding the stored scrambling and descrambling keys to the random number generator based on the control signal of the controller.

11. In a voice/data vocoding method for a mobile communication system, a method for scrambling voice and data in the mobile communication system comprising the steps of:

5 vocoding or bypassing a voice/data packet received from a radio channel interval based on a received operational mode signal;

 generating a defined random number based on scrambling key information;

 generating a sync signal and sending the generated sync signal to a cable channel interval; and

10 upon complete transmission of the sync signal, scrambling the mode-processed signal (including a PCM signal, or bypassed voice/data packet) using the random number and sending the scrambled signal to the cable channel interval.

12. In a voice/data vocoding method for a mobile communication system, a method for descrambling voice and data in the mobile communication system comprising the steps of:

 receiving an scrambled signal from a cable channel interval;

 upon receiving the scrambled signal, detecting a sync signal from the scrambled signal;

20 upon detection of the sync signal, generating a random number based on a descrambling key signal;

 descrambling the scrambled signal using the random number; and

 vocoding a descrambled PCM signal or bypassing a descrambled packet based

